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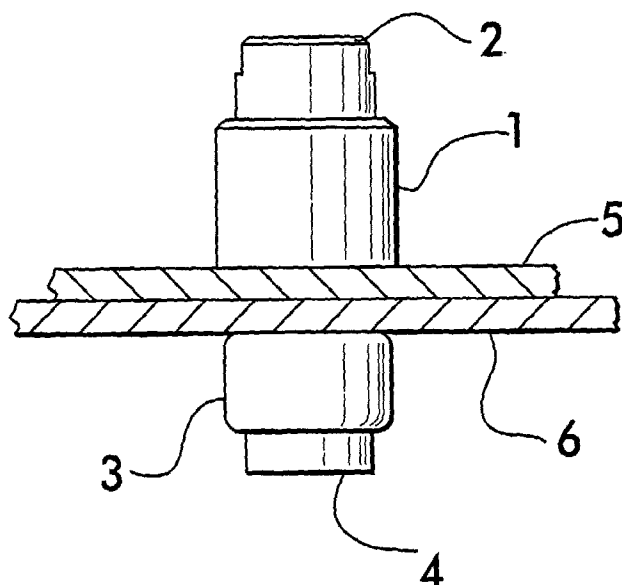
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(54) Title: QUICK ACCESS RUBBER PANEL FASTENER



(57) Abstract: A fastener for attaching two panels (5) and (6) having aligned apertures consists of a fastener which utilizes a retainer (1), a through-shaft (2), a rubber sleeve (3), and an end cap (4). The shaft extends through the retainer and a rubber sleeve is fitted around the shaft being retained axially by cap (4) which is attached to the end of the shaft (2). The pre-assembled fastener is attached to a first panel (5) preferably by clinch-type attachment. Cam surfaces on the underside of a head of the shaft and inside the retainer (1) cooperate such that when the head of the shaft is turned, the shaft (2) is withdrawn from the retainer compressing the rubber sleeve (3) between the end cap and a base of the retainer (1). This causes the rubber sleeve to bulge and apply a clamp load against the backside of the second panel (6). Thus the two panels are captured between the expanded area of the rubber sleeve and the base of the retainer. A series of radial grooves in the retainer cam ramp act in concert with a protrusion on the underside of the shaft to provide multiple resting points in the rotation. The fastener provides a single, fully-assembled component which works through standard round holes in the panels to provide panel attachment in a variety of panel thicknesses that is also vibration resistant.



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